

What is claimed is:

1. A method for enabling a simple network printer to print a print job that includes raster image processor instructions, comprising the steps of:
 - receiving a broadcast from a raster image processor (RIP)-enabled unit announcing the RIP-enabled unit's capabilities;
 - storing information on the RIP-enabled unit's capabilities in the simple network printer;
 - upon receiving a RIP print job request from a source, sending by the simple network printer, notification to the RIP-enabled unit that the source has the RIP print job;
 - spooling, by the RIP-enabled unit, the RIP print job from the source;
 - rasterizing, by the RIP-enabled unit, the RIP print job into a Printer Control Language (PCL) format; and
 - sending the RIP print job in PCL format to the simple network printer for printing.
2. The method of claim 1 wherein the source is one of: a workstation, a computer, a handheld computer, and a digital assistant.
3. The method of claim 1 wherein the simple network printer is in a network having a wireless connection for at least one of: a source, the RIP-enabled unit, and the simple network printer.
4. The method of claim 1 wherein the simple network printer is in a network that is hard-wired.

4057401.012502

5. The method of claim 1 wherein the RIP-enabled unit is one of: a laser printer having a raster image processor and a print server having a raster image processor.
6. The method of claim 1 wherein spooling, by the RIP-enabled unit, includes spooling each page separately for rasterizing and delivering in PCL format.
7. The method of claim 1 wherein the print job that includes raster image processor instructions includes instructions for printing a print image file using at least one of: Postscript®, Tagged Image File Format (TIFF), Portable Document Format (PDF), Personalized Print Markup Language (PPML), and Scalable Vector Graphics (SVG).
8. In a computer networking environment, an image processing device having a raster image processor, comprising:
 - an input unit for inputting image information including print commands in a complex print command language; and
 - a formatting unit, coupled to the input unit, wherein the formatting unit includes the raster image processor for, where selected, rasterizing the image information in accordance with the print commands to provide information in a Printer Control Language (PCL).
9. The image processing device of claim 8, wherein the image processing device is a printer server.
10. The image processing device of claim 8 wherein the image processing device is a laser printer, the formatting unit is utilized for converting the image

information and print commands into a data stream for modulating a laser, and the laser printer further comprises:

an electrophotographic image recording and registration unit having a photoconducting medium and being coupled to a laser control unit, for recording an image generated by light pulses and transferring the image to a printing medium;

a laser unit, coupled to the laser control unit, for emitting a modulated beam of light pulses;

the laser control unit, coupled to the laser unit and the formatting unit, for modulating the beam of light pulses at variable base frequencies and variable widths to transmit the data stream from the formatting unit;

a variable frequency generator, coupled to the formatting unit and the laser control unit, for generating a clock signal for a base frequency for data transfer and laser modulation;

a variable speed scanner, coupled to the laser unit and the laser control unit, for scanning a modulated laser beam in vertical and horizontal directions across the photoconductive medium wherein scanning in the horizontal direction includes using a rotating mirror face to direct the modulated laser beam;

control circuitry, coupled to the formatting unit, the laser control unit, the variable frequency generator and the variable speed scanner, for operating the laser printer according to a predetermined scheme.

11. The image processing device of claim 8 wherein the image processing device is interconnected to at least one of: a workstation, a computer, a handheld computer, and a digital assistant.
12. The image processing device of claim 11 wherein the image processing device is in a network having a wireless connection for at least one of: the image processing device, a workstation, a computer, a handheld computer, a digital assistant and a simple network printer.
13. The image processing device of claim 11 wherein the image processing device is in a network that is hard-wired.
14. The image processing device of claim 8 wherein the image processing device rasterizes the image information by spooling each page separately and delivers the rasterized information to a simple network printer in PCL format for printing.
15. The image processing device of claim 8 wherein the image information including print commands in a complex print command language includes at least one of: Postscript®, Tagged Image File Format (TIFF), Portable Document Format (PDF), Personalized Print Markup Language (PPML), and Scalable Vector Graphics (SVG).
16. A computer network comprising:
 - a raster image processor-enabled unit interconnected to at least one simple network printer and at least one computing unit via the network, for facilitating implementation of printing jobs;

the at least one simple network printer interconnected to the raster image processor-enabled unit and the at least one computing unit, for at least utilizing raster image processing capabilities of the raster image processor-enabled unit for printing print jobs having commands in a complex print command language; and

a plurality of computing units interconnected to the raster image processor-enabled unit and the at least one simple network printer, for providing print jobs to at least the one simple network printer.

17. The computer network of claim 16 wherein the computer network has a wireless connection for at least one of: the raster image processor-enabled unit, a computing unit of the plurality of computing units, and the simple network printer.

18. The computer network of claim 16 wherein the computing unit of the plurality of computing units is one of: a workstation, a computer, a handheld computer, and a digital assistant.

19. The computer network device of claim 16 wherein the computer network is hard-wired.

20. The computer network of claim 16 wherein the raster image processor-enabled unit is an image processing device having a raster image processor, comprising:

an input unit for inputting image information including print commands in a complex print command language; and

a formatting unit, coupled to the input unit, wherein the formatting unit includes the raster image processor for, where selected, rasterizing the image information in accordance with the print commands to provide a information in a Printer Control Language (PCL).

21. The computer network of claim 20 wherein the image processing device is a printer server.

22. The computer network of claim 20 wherein the image processing device is a laser printer, the formatting unit is utilized for converting the image information and print commands into a data stream for modulating a laser, and the laser printer further comprises:

an electrophotographic image recording and registration unit, coupled to the laser control unit and having a photoconducting medium, for recording an image generated by light pulses and transferring the image to a printing medium;

a laser unit, coupled to the laser control unit, for emitting a modulated beam of light pulses;

the laser control unit, coupled to the laser unit and the formatting unit, for modulating the beam of light pulses at variable base frequencies and variable widths to transmit the data stream from the formatting unit;

a variable frequency generator, coupled to the formatting unit and the laser control unit, for generating a clock signal for a base frequency for data transfer and laser modulation;

a variable speed scanner, coupled to the laser unit and the laser control unit, for scanning a modulated laser beam in vertical and horizontal directions across the photoconductive medium wherein scanning in the horizontal direction includes using a rotating mirror face to direct the modulated laser beam;

control circuitry, coupled to the formatting unit, the laser control unit, the variable frequency generator and the variable speed scanner, for operating the laser printer according to a predetermined scheme.

23. The computer network of claim 20 wherein the image processing device rasterizes the image information by spooling each page separately and delivers the rasterized information to a simple network printer in PCL format for printing.

24. The computer network of claim 16 wherein the image information includes instructions for printing a print image file using at least one of: Postscript®, Tagged Image File Format (TIFF), Portable Document Format (PDF), Personalized Print Markup Language (PPML), and Scalable Vector Graphics (SVG).

25. A simple network printer, arranged to process a print job that includes raster image processor (RIP) instructions via proxying a raster image processor-enabled unit that converts the RIP instructions and image information of the print job to a predetermined Printer Control Language (PCL) format, the simple network printer comprising:

a transceiver, intercoupled to the RIP-enabled unit and a plurality of computing units in a network that includes the simple network printer, for receiving a broadcast from the RIP-enabled unit, wherein the broadcast announces information on the RIP-enabled unit's capabilities;

wherein the transceiver, upon receiving a RIP print job request from a computing unit of the plurality of computing units, sends notification to the RIP-enabled unit that the simple network printer has received the RIP print job request and upon rasterizing, by the RIP-enabled unit, the RIP print job into a Printer Control Language (PCL) format, the transceiver receives the RIP print job in the predetermined PCL format for printing;

a storage unit, coupled to the transceiver and to a printer control unit, for storing information on the RIP-enabled unit's capabilities;

the printer control unit, coupled to the transceiver, the storage unit and a printing unit, for controlling operation of the simple network printer in accordance with a predetermined scheme; and

the printing unit, coupled to the printer control unit and the transceiver, for printing image information in accordance with the predetermined PCL format.

26. The simple network printer of claim 25 wherein the computing unit is one of: a workstation, a computer, a handheld computer, and a digital assistant.

10057401.012301
"T0425001"

27. The simple network printer of claim 25 wherein the RIP-enabled unit is one of: a laser printer having a raster image processor and a print server having a raster image processor.

28. The simple network printer of claim 25 wherein the RIP-enabled unit spools each page separately for rasterizing and delivering in the predetermined PCL format.

29. The simple network printer of claim 25 wherein the print job that includes raster image processor instructions includes instructions for printing a print image file using at least one of: Postscript®, Tagged Image File Format (TIFF), Portable Document Format (PDF), Personalized Print Markup Language (PPML), and Scalable Vector Graphics (SVG).

30. The simple network printer of claim 25 wherein the simple network printer is in a network having a wireless connection for at least one of: the simple network printer, a workstation, a computer, a handheld computer, a digital assistant, and the RIP-enabled unit.

31. The simple network printer of claim 25 wherein the simple network printer is in a network that is hard-wired.

32. A method for enabling a simple network printer to print a print job that includes raster image processor instructions, comprising the steps of:

receiving and storing, by the simple network printer, a broadcast from a raster image processor (RIP)-enabled unit, announcing the RIP-enabled unit's capabilities; and

upon receiving a RIP print job request from a source, requesting the RIP-enabled unit to proxy the print job and send the print job in simple format to the simple network printer for printing.

33. The method of claim 32 wherein the simple format is Printer Control Language format.

34. The method of claim 32 wherein the RIP-enabled unit is one of: a printer server and a laser printer.

2025-04-04 10:45:00